

Atty. Docket No. PIA31069/ANS
Serial No: 10/751,184

Amendments to the Claims

1. (Currently Amended) A method for etching a metal layer having an oxide-based antireflective coating (ARC) layer thereon comprising the steps of:
~~dry cleaning the ARC layer performing a first dry cleaning process in an etching chamber~~
with an oxide-based gas; and
~~etching at least part of the metal layer performing a second dry cleaning process in the chamber~~ with a gas mixture comprising Cl_2 and CHF_3 ; then
etching the metal layer.
2. (Previously Presented) The method of claim 1, wherein a flow rate of the Cl_2 ranges from about 100 sccm to about 200 sccm.
3. (Previously Presented) The method of claim 1, wherein a flow rate of the CHF_3 ranges from about 5 sccm to about 30 sccm.
4. (Currently Amended) The method of claim 1, wherein a pressure of ~~each of the dry cleaning and etching steps~~ processes ranges from about 8 mTorr to about 50 mTorr.
5. (Currently Amended) The method of claim 1, wherein a source power of ~~each of the dry cleaning and etching steps~~ processes ranges from about 500 W to about 1200 W.
6. (Currently Amended) The method of claim 1, wherein a bias power of ~~each of the dry cleaning and etching steps~~ processes ranges from about 0 W to about 10 W.
7. (Currently Amended) The method of claim 1, wherein the ~~method is~~ dry cleaning processes are performed for about 5 seconds to about 30 seconds.

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8. (Previously Presented) The method of claim 1, wherein the oxide-based gas comprises oxygen.

9. (Currently Amended) The method of claim 1, wherein the dry cleaning and etching steps processes are performed sequentially in a single etching chamber.

10. (Currently Amended) The method of claim 1, wherein the metal layer and ARC layer are on a wafer having a center area and an edge area, and the etching step decreases dry cleaning processes decrease a microloading effect in the edge area.

11. (Currently Amended) The method of claim ~~1~~10, wherein the metal layer is etched at a rate that is substantially the same in the center area and the edge area.

12. (Currently Amended) The method of claim 1, wherein the ~~etching step (i) is performed in a chamber and (ii) further~~ second dry cleaning process eliminates polymers deposited in the chamber.

13. (Currently Amended) The method of claim 1, wherein the ~~etching step further~~ second dry cleaning process eliminates aluminum- and silicon-containing byproducts.

14. (Previously Presented) The method of claim 1, wherein the metal layer comprises an aluminum layer.

15. (Previously Presented) The method of claim 14, wherein the metal layer further comprises a titanium nitride layer under the aluminum layer.

16. (Previously Presented) The method of claim 1, wherein the ARC layer comprises a silicon oxide.